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October 2, 2015

To: Blood Bank Directors, Supervisors and Personnel
From: Robert R. Rees, MHA, Manager, Blood Bank Program
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Clinical Laboratory Improvement Services (CLIS)
Public Health and Environmental Laboratories (PHEL)
Subject: 2014 Statistical Summary of Blood Use in New Jersey

The Department has compiled the information regarding blood and blood component collections, transfusions and other applicable blood related activities to prepare the "2014 Statistical Summary of Blood Use in New Jersey" report in order to provide the regulated community an overview of the blood collections and transfusions in New Jersey. The information was submitted by 5 Blood Centers (BC); 73 Hospitals; 28 Umbilical Cord Blood (UCB) and Hematopoietic Progenitor Cell (HPC) facilities; 2 Brokers; 11 Out of Hospital Transfusion (OOHT) facilities; 51 Dialysis facilities and 95 Perioperative Autologous Blood Collection/Administration (PABCA) facilities which includes 27 hospitals, 60 Ambulatory Surgery Centers (ASC) and 8 Licensed Contract Providers (LCP). CLIS hopes this information is helpful and welcomes any comments and suggestions you may have towards improving the value and usefulness of this report for future years.

New Jersey continues to have an annual blood collection deficit and must regularly import blood from other states to meet the transfusion needs of our citizens. Refer to Tables I, II and III and the summaries of each.

CLIS would like to thank the Blood Bank Task Force of New Jersey, the New Jersey Hospital Association, hospitals, blood drive sponsors and advocates, and public/private partnerships such as the New Jersey Workplace Blood Donor Coalition for their initiatives and dedication to promote routine blood donation.

Table I Blood Collections in New Jersey

As noted in Table I, the total blood collected in New Jersey has continually decreased since 2012.

BC were responsible for the collection of 249,545 units or 96%, while hospitals collected 11,023 units or 4% of the total blood collected in 2014. Autologous donations have decreased from 3,360 units or 1% of the total blood collected in 2012 to 1,370 units or 0.5% in 2014 while directed donations decreased from 1,949 units or 1% in 2012 to 1,053 units or 0.4% in 2014.

Six BC and the hospitals that collect blood reported a decrease of 28,614 units of blood collected and one BC reported an increase of 3,056 units of blood collected as compared to their 2013 total collections, resulting in a net decrease of 25,558 units of blood collected or 5.7% in 2014.

Five BC and one hospital that collect blood reported collecting 29,246 RBC units from double red cell apheresis donors in 2014, a decrease of 4,172 units or 12.5% when compared to 33,388 RBC units collected in 2013.

Table II Number of Red Blood Cell (RBC) and Whole Blood (WB) Units Collected vs. Number of RBC and WB Units Transfused

CLIS has been tracking and reporting the total blood collected and RBC/WB units transfused annually in New Jersey to determine statewide trends in the collection and transfusion of blood.

The total blood collected in New Jersey has failed to meet the transfusion needs of NJ citizens since 1996 with the exceptions of 2001 and 2008. It was observed that the total blood collected has decreased from 344,277 units in 2008 to 260,568 units in 2014 or by 24%.

CLIS observed that the total number of RBC/WB transfusions has decreased from 344,680 units in 2009 to 299,586 units in 2014 or by 13%.

The difference between the total number of WB and RBC units collected versus transfused from 2005 to 2014 is graphically illustrated in the Table II chart.

Table III Allogeneic Blood Collections

In 2014, the total allogeneic blood collected by American Red Cross Penn-Jersey Region (ARC), New Jersey Blood Services/NYBC (NJBS), the Community Blood Centers (CBC), and the hospital blood banks was 258,145 units and of that allogeneic blood collected, 13,856 units were discarded for the reasons noted in the summary of Table IV – Discard Totals.

ARC has consistently shown a significant deficit in the amount of allogeneic blood collected and available for transfusion when compared to the number of allogeneic units distributed in New Jersey. CLIS observed in 2014, the number of allogeneic units collected and available for distribution by ARC decreased 8.7% or 8,170 units. ARC distributed 99,432 allogeneic units to New Jersey in 2014, a decrease of 7.0% or 7,481 units. ARC experienced a deficit of 13,505 allogeneic units in 2014.

NJBS has consistently shown a significant surplus in the amount of blood collected and available for transfusion when compared to the number of allogeneic units distributed in New Jersey. In 2014, the number of allogeneic units collected and available for distribution by NJBS decreased 8.0% or 5,070 units. NJBS distributed 25,199 allogeneic units to New Jersey in 2014, an increase of 40.0% or 7,197 units. NJBS experienced a surplus of 33,233 allogeneic units in 2014.

The CBC have consistently shown a significant deficit in the amount of allogeneic blood collected and available for transfusion when compared to the number of allogeneic units distributed in New Jersey. In 2014, the number of allogeneic units collected and available for distribution by the CBC decreased 11.1% or 11,219 units. CBC distributed 153,393 allogeneic units to New Jersey in 2014, a decrease of 1.9% or 2,992 units. CBC experienced a deficit of 63,169 allogeneic units in 2014.

As a result, the total supply of allogeneic blood collected in and available for distribution to New Jersey hospitals was 244,289 units and the total allogeneic units distributed to the New Jersey hospitals for transfusion were 287,730.

The difference between the total available supply of allogeneic blood collected in New Jersey and allogeneic units distributed to New Jersey hospitals for transfusion from 2010 to 2014 is graphically illustrated in the Table III charts.

Table IV Discard Totals

In 2014, of the 260,568 units of blood collected by BC and hospitals, 14,048 units or 5.4% were discarded for reasons noted below.

Blood Centers

ARC, NJBS and the CBC reported discarding 13,529 units or 4.2% of their total blood collections in 2014 due to positive/reactive test results or other reasons as follow:

HBsAg – 53	Irregular Antibodies – 168
HBcAb – 895	Breakage/Contamination – 2,028
HCV – 175	Other – 7,220 (See below for details)
HIV – 164	• Incorrect volume (overweight, underweight, QNS)
HTLV I/II – 68	• DHQ incomplete; Missing test results
Syphilis – 249	• Product failures (bloody, lipemic, clotted)
Outdating – 2,243	• Temperature failures (storage, transport)
Donor Deferral - 266	• QA issues (SOP not followed, QC failures)

CLIS observed that the total number of units discarded by BC increased from 11,450 in 2013 to 13,529 in 2014. Specifically, the total number of units discarded by ARC and NJBS decreased from 4.7% and 0.9%, respectively, in 2013 to 4.5% and 0.8%, respectively, in 2014 and the total number of units discarded by CBC increased from 5.7% in 2013 to 9.0% in 2014.

Hospitals

In 2014, New Jersey hospitals reported discarding a total of 5,202 units (including 519 units collected by and 4,683 units distributed to them). Outdating accounted for 71.0% or 3,694 units that were discarded and of the outdated units, 78.0% or 2,892 were allogeneic units (including 132 collected by the hospitals) and 21.0% or 761 were autologous units (including 161 collected by the hospitals). The hospitals that collect blood reported discards for the following reasons:

HBcAb – 22	Irregular Antibodies – 21
HCV – 5	Breakage/Contamination – 490
HIV – 4	Other – 951 (See below for details)
HTLV I/II – 3	• Out of refrigerator >30 min. (incl. pneumatic tube issues)
Syphilis – 8	• Wasted by floor (i.e. spiked and not used)
Chagas – 1	• Equipment and/or product failure (incl. filter issues)
Donor Deferral – 3	• Unacceptable preparation of RBC

CLIS observed that the total number of units discarded by hospitals increased 5.4% or 267 units when compared to 2013.

Table V Hemapheresis

Volunteer Apheresis

Volunteer apheresis collections increased 4.0% in 2014 from 46,295 units in 2013 to 48,166 units as reported by six hospitals, six BC, and one Plasmapheresis Center. Refer to Table V for the total number of volunteer apheresis donors and units collected from 2012 to 2014.

Therapeutic Apheresis

Therapeutic apheresis procedures reported by hospitals and LCP increased 10.2% from 3,063 in 2013 to 3,375 in 2014. Refer to Table V for the total number of therapeutic apheresis procedures and patients from 2012 to 2014.

Table V A Perioperative Autologous Blood Collection and Administration

Thirteen hospitals and six LCP reported performing 12,871 Intraoperative Autologous Blood Collection/Administration procedures and fifteen hospitals and three LCP reported performing 3,961 Post-Operative Autologous Blood Collection/Administration procedures.

Three LCP and three hospitals reported performing 993 and 372 Acute Normovolemic Hemodilution procedures, respectively.

Seven LCP and four hospitals reported collecting/processing/administering 347 and 364 Platelet Rich Plasma (PRP) products, respectively and thirty-six ASC reported collecting/processing/administering 2,342 Platelet Rich Plasma (PRP) products.

Refer to Table V A for the total number of different PABCA procedures performed from 2012 to 2014.

Table VI Salvaged Plasma

Refer to Table VI for the total number of units collected and the volume in liters of salvaged plasma that were distributed for further manufacture as reported by licensed brokers, BC and hospitals that collect blood from 2012 to 2014.

Table VII Transfusion Reactions Reported by Hospitals and OOHT Facilities

The hospitals and OOHT facilities reported transfusing 299,586 WB and RBC units and 145,655 units of other blood components in 2014. Of the 445,241 total transfusions, 1,488 recipients or 0.3% experienced suspected adverse reactions to the transfusions which included four acute hemolytic, eighteen delayed hemolytic, and seventy-one delayed serologic. Refer to Table VII for the different types of reactions that occurred.

All of the acute hemolytic transfusion reactions occurred within 24 hours of the completion of the transfusions and the recipient's exhibited new onset of signs and symptoms of suspected adverse reactions. These four reactions were due to the presence of the following antibodies: c, Fy_b, Le_a and hrS.

In all of the delayed hemolytic transfusion reactions, the recipient's exhibited a positive post-transfusion direct antiglobulin test (DAT) for antibodies developed between 24 hours and 28 days of the completion of the transfusions and a positive elution test with an alloantibody present on the transfused red blood cells or a newly-identified alloantibody in the recipient's serum.

In all of the delayed serologic transfusion reactions, there were no clinical signs of hemolysis and there was demonstration of new, clinically-significant alloantibodies by either a positive DAT or antibody screen. The blood banks detected and identified the following alloantibodies that caused the delayed hemolytic and/or serologic reactions: C, c, D, E, N, S, s, Kell, Kell1, Fy_a, Jk_a, Jk_b, Lu_a and HLA Hemagglutinins. Refer to Table VII for the different types of suspected adverse reactions reported from 2012 to 2014.

Table VII A Donor Reactions Reported by BC and a Plasmapheresis Center

The BC reported a decrease in the number of adverse donor reactions from 4,610 in 2013 to 3,950 in 2014. **NOTE:** *Two of the licensed blood centers did not report figures for donor reactions contributing to the decrease in reactions in 2014 when compared to the 2013 figures.* Refer to Table VII A for the specific reaction types and their percentages from 2012 to 2014.

Table VIII Breakdown by Site of Transfusion

Seventy-three hospitals transfused 291,295 RBC and WB units or 97.2% of the RBC and WB transfusions while thirteen OOHT facilities (off-site) transfused 8,291 RBC units or 2.8% of the RBC transfusions in 2014.

Refer to Table VIII for the total number of WB and RBC transfusions reported by hospitals and OOHT facilities from 2012 to 2014.

Table IX Units Transfused in New Jersey

Refer to Table IX for the breakdown of the total number of WB, RBC and other blood component transfusions in the hospitals and OOHT facilities (off-site) from 2012 to 2014. The grand total of transfusions continues to decrease annually from 475,968 in 2012 to 445,241 in 2014.

Table X Hospital and Out of Hospital Use Categorized by Donor Type

Refer to Table X for the proportion of WB to RBC units transfused which remained relatively stable. In 2014, blood transfusions consisted of 99.9% RBCs and 0.1% WB. One hundred percent of the WB units were transfused to autologous recipients. For RBC transfusions, allogeneic accounted for 99.7%, directed accounted for 0.2% and autologous accounted for 0.1%.

Table XI Distribution of Blood to Transfusion Services by County

Please refer to Table XI for the distribution of WB and RBC units to New Jersey hospitals by county in 2014. The numbers are reported by the hospitals as compared to those reported by the CBC, ARC and NJBS.

Errors and Accidents

In 2014, the BC, Hospitals that collect blood and Transfusion Services reported 423 Error/Accident incidents to the Department of which 280 were classified as accidents and 143 as errors. Of the 280 accidents, 275 or 98% were Post Donation Information (PDI).

Errors/Accidents reported by BC and Hospitals that collect blood were as follows:

- Travel to malarial endemic area; risk factors associated with CJD travel
- Male donor had sex with another male

- Donor reported illness (infection/fever/diarrhea/vomiting); donor diagnosed with Babesiosis, Lyme Disease, STD, Mumps, Mononucleosis, Polycythemia Vera, MRSA or clotting disorder post donation
- Donor history of hepatitis; melanoma; IV drug or steroid use; exposure to blood; receipt of bone, tissue, dental or dura mater graft; receiving money/drugs for sex; and receiving a tattoo or piercing
- Donor took Avodart, Jalyn, Plaquenil, Pradaxa, Plavix, Propecia and/or Proscar medications; donor received growth hormone of unknown origin; donor received Shingles vaccine
- Incomplete and/or incorrect donor history records; incorrect review of donor deferral and/or previous donation records (including RBC/Plasma losses); and improper donor health assessments
- Subsequent testing confirmed positive for HCV, HBV, or HIV; confirmed positive HBsAg; repeat reactive and/or confirmed positive anti-HBc
- Distribution of RBC/FFP units with clots and/or hemolyzed; RBC units distributed with missing/leaking segments
- Inappropriate distribution of products prior to completion of required testing (hematocrit/WBC of final product not verified) and/or inadequate testing performed (Chagas, CMV); inadequate preparation of products; inadequate and/or incomplete product/equipment QC
- RBC/SDP units improperly leukoreduced and/or irradiated and distributed to hospital consignees; RBC/SDP units leukoreduced and/or irradiated per SOP but relabeled incorrectly and distributed to hospital consignees
- RBC/FFP units distributed to hospital consignees at unacceptable temperatures; SDP units distributed past expiration date
- Distribution of RBC units without required antigen testing or with incorrect antigen testing results; incorrect ABO/Rh; improperly washed; overweight and SDP units that subsequently tested positive for bacteria
- Distribution of products mislabeled with incorrect volumes, WBN, blood types, unit attributes, expiration dates/times, autologous and/or directed donor information

Errors reported by Transfusion Services were as follows:

- Technical errors in testing/interpretation of ABO, Rh, antibody screening, antibody identification, antigen typing and/or the performance of incorrect cross matches; testing not performed as required by SOP; incorrectly labeled products post pooling and/or washing
- Nurses failure to positively identify recipients resulting in the transfusion of incorrect blood/blood products; blood products transfused with incorrect filter and/or solution
- Transfused packed RBC units that were non-irradiated for an "irradiated" order; non-leukoreduced for a "leukoreduced" order; CMV positive for a "CMV negative" order; and were not antigen typed to recipients with an antibody
- Issued and/or transfused SDP and FFP units when RBC were ordered and RBC units when SDP and FFP were ordered; issued and transfused Allogeneic and Directed units prior to Autologous units
- Issued and transfused FFP and/or SDP units that were expired

- Used mislabeled or expired samples for compatibility testing; expired reagents used in compatibility testing
- Products issued and transfused but not released in Blood Bank Computer System
- Released products without transfusion tags and/or with incorrect and/or incomplete transfusion tags; that were expired; after notification of a product recall and prior to completion of required testing
- Cord blood samples used for testing were incorrectly labeled; SOPs not followed when performing testing on cord blood samples

Umbilical Cord Blood Collections

Twenty-two facilities are licensed by the Department to collect, process and/or store umbilical cord blood (UCB) from prospective mother's in New Jersey. These licensed facilities include eighteen out-of-state facilities located in Arizona, California, Connecticut, Florida, Georgia, Indiana, Illinois, Kentucky, Massachusetts, Nevada, New York and Puerto Rico. These facilities reported collecting 7,598 UCB units; processing 5,945 UCB units; storing 5,877 UCB units and transplanting 22 UCB units in 2014.

Hematopoietic Progenitor Cell Collections

Eleven facilities are licensed by the Department to collect, process and/or store hematopoietic progenitor cells (HPC) from the citizens of New Jersey. Five licensed facilities reported performing 1,299 HPC collections in NJ hospitals, processing/storing 1,157 HPC units for future transplantation and transplanting 631 HPC units in 2014.

Other Hospital, OOH, Transfusion Only and ASC Information Reported to the Department

- Seventy-two hospitals reported a total bed capacity of 23,985 beds and seventy hospitals reported performing 526,382 surgical procedures in 2014.
- Fifty-eight hospitals reported transfusing 235 patients with 978 least incompatible units.
- Twelve OOH (off-site) facilities reported performing 1,146 Therapeutic Phlebotomy Collections in 2014.
- Thirteen OOHT facilities (off-site) reported transfusing 5,328 SDP, 355 FFP and 20 Cryoprecipitate components in 2014. **NOTE:** *These figures are included in the transfusions reported by the blood banks in the hospitals where these facilities are located.*
- Thirty-six licensed facilities (located within the hospital) reported transfusing 5,245 RBC units, sixteen units of SDP and seventy-eight units of FFP during hemodialysis treatments and eight licensed Long Term Acute Care (LTAC) and/or Specialty Care facilities reported transfusing 2,174 RBC units, 102 SDP units and 105 FFP units in 2014. **NOTE:** *These figures are included in the transfusions reported by the blood banks in the hospitals where these facilities are located.*

NOTES:

- State of New Jersey Website: www.nj.gov
- Department of Health Website: www.nj.gov/health

- Clinical Laboratory Improvement Services Website:
www.nj.gov/health/phe/clis.shtml
- It is the **responsibility** of each licensed facility to ensure that companies that *contract with them* to perform umbilical cord blood and/or hematopoietic progenitor cell collection, Perioperative Autologous Blood Collection/Administration procedures (inclusive of providers of Platelet Rich Plasma), therapeutic apheresis procedures, transfusion only procedures (inclusive of LTACH and/or Specialty Care facilities) and/or dialysis services (inclusive of transfusions performed during hemodialysis treatments) have a blood bank license to operate in New Jersey (*inclusive of companies located out of state*).
- For electronic submission of Error/Accident and Transfusion Reaction Reports, send to: dohbb@doh.state.nj.us
- For questions about this report, please call Robert Rees at (609) 406-6826.

TABLE I**BLOOD COLLECTIONS IN NEW JERSEY**

Number of Units Drawn	2012	%	2013	%	2014	%
Hospital Blood Banks						
All Donations	14,593	5%	13,147	5%	11,023	4%
Allogeneic	12,949	4%	11,880	4%	10,064	4%
Autologous	730	22%	386	18%	411	30%
Directed	914	47%	881	56%	548	52%
Community Blood Centers*						
All Donations	107,973	36%	109,193	38%	99,994	38%
Allogeneic	105,701	36%	107,609	38%	99,190	38%
Autologous	1,531	45%	1,072	48%	499	36.4%
Directed	741	38%	512	32%	305	29%
ARC Penn-Jersey Region						
All Donations	101,258	33%	99,401	35%	90,511	35%
Allogeneic	100,249	34%	98,769	35%	90,000	35%
Autologous	745	22%	495	22%	348	25.4%
Directed	264	13%	137	9%	163	15%
NJ Blood Services (NYBC)						
All Donations	79,467	26%	64,385	22%	59,040	23%
Allogeneic	79,083	26%	64,066	23%	58,891	23%
Autologous	354	11%	270	12%	112	8.2%
Directed	30	2%	49	3%	37	4%
Totals						
All Donations	303,291	100%	286,126	100%	260,568	100%
Allogeneic	297,982	98.0%	282,324	99.0%	258,145	99.1%
Autologous	3,360	1.0%	2,223	0.5%	1,370	0.5%
Directed	1,949	1.0%	1,579	0.5%	1,053	0.4%

* The aggregated numbers shown for Community Blood Centers represent the total number of collections as reported by Central Jersey Blood Center, Community Blood Council of New Jersey, Community Blood Services, Miller-Keystone Blood Center and The Blood Center of New Jersey.

NOTE: NBAH Blood Center (currently RWJUH Blood Services) was removed and the collection numbers added to the Hospital Blood Banks.

TABLE II
NUMBER OF WHOLE BLOOD (WB) and RED BLOOD CELL (RBC) UNITS COLLECTED
vs. NUMBER OF WB and RBC UNITS TRANSFUSED

Year	Units Collected	Units Transfused
2005	302,684	339,512
2006	306,663	343,721
2007	314,922	337,731
2008	344,277	343,607
2009	339,512	344,680
2010	325,567	334,236
2011	308,842	333,433
2012	303,291	324,166
2013	286,126	312,893
2014	260,568	299,586

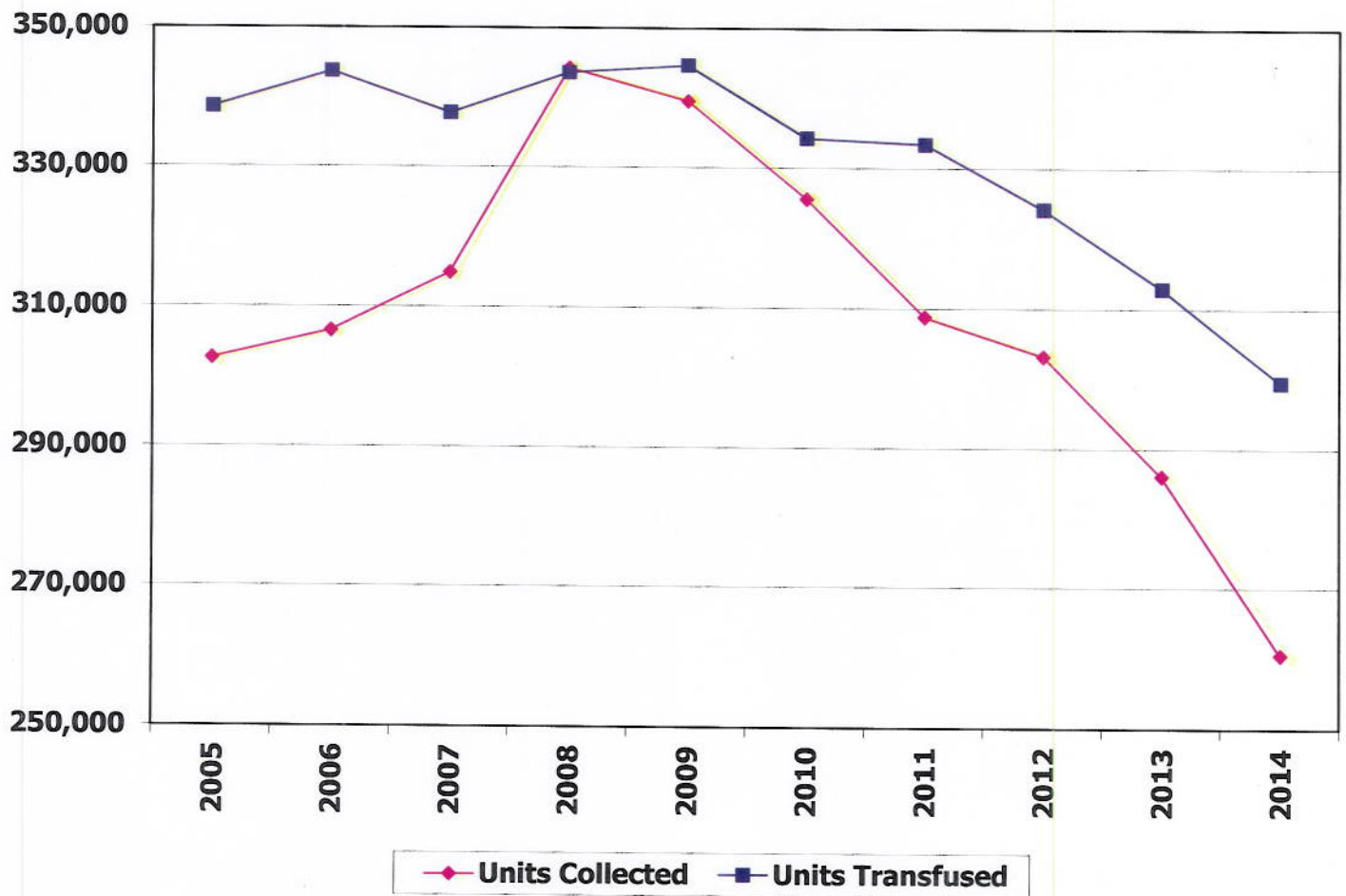
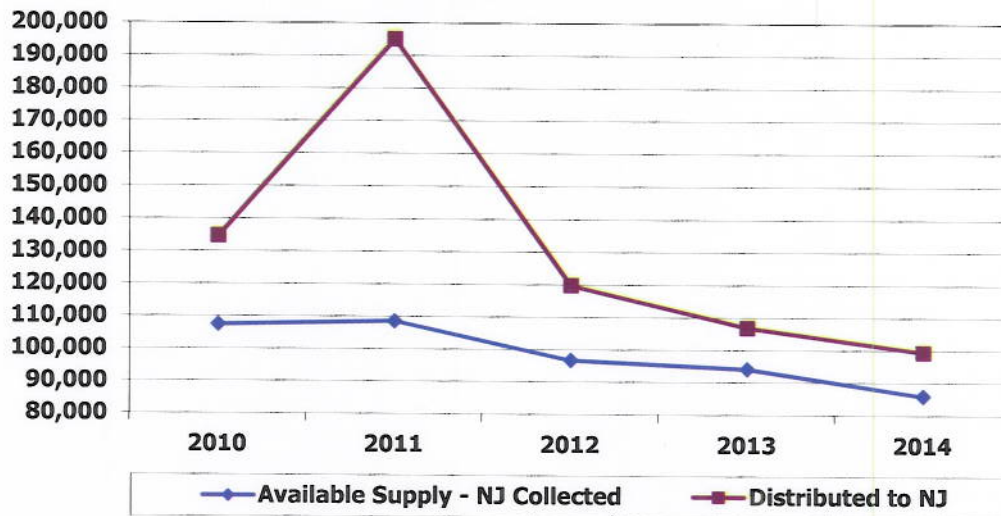


TABLE III

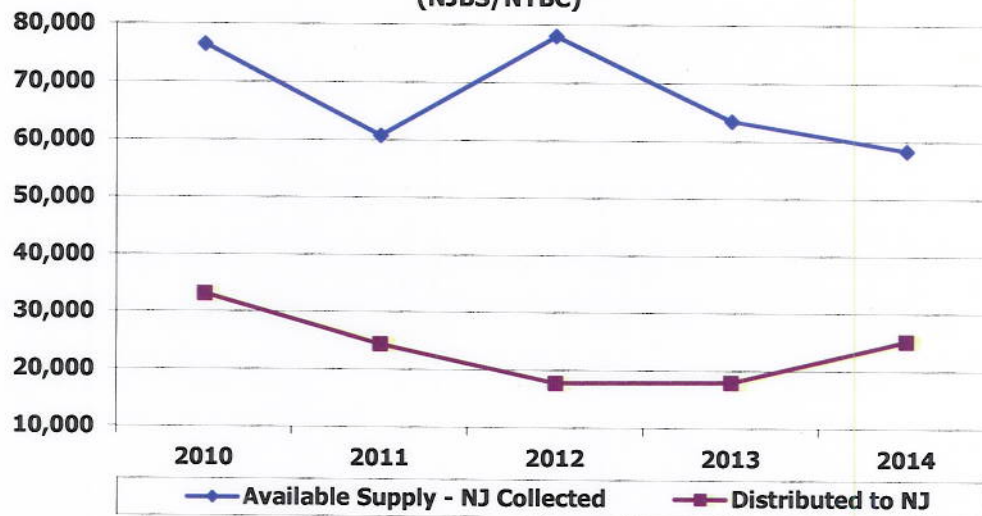
ALLOGENEIC BLOOD COLLECTIONS

	Year	Collected Units	Discarded Units	Available Supply – NJ Collected Units	Distributed to NJ	Surplus/ Deficit
American Red Cross Penn-Jersey Region	2010	112,788	5,342	107,446	134,755	-27,309
	2011	112,689	4,120	108,569	195,108	-86,539
	2012	100,249	3,594	96,655	119,862	-23,207
	2013	98,769	4,672	94,097	106,913	-12,816
	2014	90,000	4,073	85,927	99,432	-13,505
New Jersey Blood Services/ NYBC	2010	80,672	4,154	76,518	33,135	43,383
	2011	61,812	996	60,816	24,414	36,402
	2012	79,083	1,064	78,019	17,772	60,247
	2013	64,066	564	63,502	18,002	45,500
	2014	58,891	459	58,432	25,199	33,233
Community Blood Centers	2010	111,335	14,024	97,311	163,004	-65,693
	2011	114,796	7,908	106,888	168,490	-61,602
	2012	105,701	7,573	98,128	166,565	-68,437
	2013	107,609	6,166	101,443	156,385	-54,942
	2014	99,190	8,966	90,224	153,393	-63,169
Hospital Blood Banks	2010	11,312	192	11,120	11,120	0
	2011	12,850	580	12,270	12,270	0
	2012	12,949	332	12,617	12,617	0
	2013	11,880	511	11,369	11,369	0
	2014	10,064	358	9,706	9,706	0

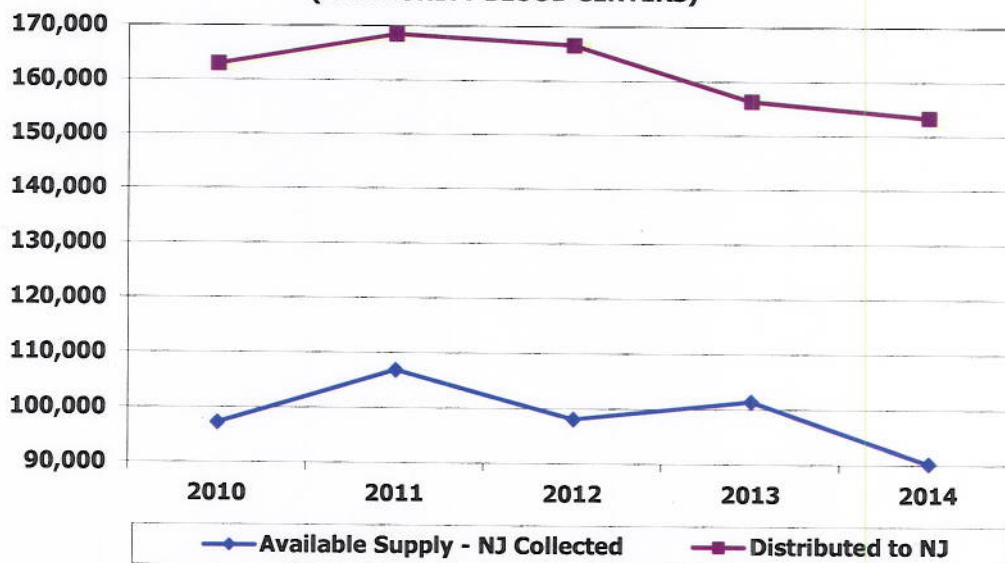
**ALLOGENEIC BLOOD COLLECTIONS
(ARC PENN-JERSEY)**



**ALLOGENEIC BLOOD COLLECTIONS
(NJBS/NYBC)**



**ALLOGENEIC BLOOD COLLECTIONS
(COMMUNITY BLOOD CENTERS)**



**TABLE IV
NUMBER OF DONOR UNITS DISCARDED:**

	Allogeneic		Autologous		Directed		All Types	%
AMERICAN RED CROSS PENN-JERSEY REGION								
2010	5,342		0		0		5,342	4.7%
2011	4,120		0		0		4,120	3.6%
2012	3,594		2		3		3,599	3.6%
2013	4,672		0		0		4,672	4.7%
2014	4,073		0		0		4,073	4.5%
NEW JERSEY BLOOD SERVICES/NYBC								
2010	4,154		32		2		4,188	5.2%
2011	996		0		0		996	1.6%
2012	1,064		0		0		1,064	1.3%
2013	564		0		0		564	0.9%
2014	459		0		0		459	0.8%
COMMUNITY BLOOD CENTERS								
2010	14,024		71		149		14,244	12.4%
2011	7,908		119		135		8,162	6.9%
2012	7,573		59		90		7,722	7.2%
2013	6,166		18		30		6,214	5.7%
2014	8,966		20		11		8,997	9.0%
ALL HOSPITALS (Units collected in-house and received from contract suppliers)								
2010	3,085		2,807		128		6,020	
2011	3,137		1,875		108		5,120	
2012	3,502		1,784		103		5,389	
2013	3,791		1,122		22		4,935	
2014	4,388		761		53		5,202	
GRAND TOTALS							All Types	
2010							29,794	9.1%
2011							18,398	6.0%
2012							17,774	5.9%
2013							16,385	5.7%
2014							18,731	7.2%

TABLE V

VOLUNTEER APHERESIS (Blood Centers, Hospitals and 1 Plasmapheresis Center)

Procedures Performed	2012		2013		2014	
	Donors	Units	Donors	Units	Donors	Units
Plasmapheresis	3,008	3,771	3,173	9,900	4,285	17,371
Leukapheresis	3	0	8	8	0	0
Plateletpheresis	13,978	32,115	13,476	36,387	11,676	30,795
<u>THERAPEUTIC APHERESIS</u> (Hospitals and Licensed Contract Providers)						
Procedures Performed	Patients	Procedure	Patients	Procedures	Patients	Procedures
Therapeutic Plasmapheresis	370	2,759	298	2,866	388	3,093
Therapeutic Leukapheresis	27	40	12	27	14	28
Therapeutic Plateletpheresis	2	8	2	12	5	6
RBC Exchange	82	194	71	158	96	248

TABLE V A
PERIOPERATIVE AUTOLOGOUS BLOOD COLLECTION and ADMINISTRATION
(Hospitals, ASCs and Licensed Contract Providers)

Procedures Performed	2012	2013	2014
Intraoperative	11,382	13,625	12,871
Postoperative	5,124	5,735	3,961
Acute Normovolemic Hemodilution	471	351	1,365
Platelet Rich Plasma (Hosp./LCP)	525	755	711
Platelet Rich Plasma (ASC)	2,193	1,840	2,342

TABLE VI
SALVAGED PLASMA

	2012		2013		2014	
	Units	Liters	Units	Liters	Units	Liters
Hospital Blood Banks	3,737	799	3,649	927	2,897	738
Community Blood Centers, ARC and NJBS/NYBC	97,136	19,818	208,511	42,036	206,770	44,787
Licensed NJ Brokers		133,363		108,999		104,096

Table represents the method used by blood banks to report these figures to the Department.

TABLE VII
TRANSFUSION REACTIONS REPORTED BY HOSPITAL BLOOD BANKS

Reaction Types:	2012	2013	2014
Acute Hemolytic	1	9*	4*
Delayed Hemolytic	3	3	18*
Delayed Serologic	108	93	71
Febrile	730	668	672
Allergic	581	614	515
Anaphylactic	3	2	1
Bacterial Contamination	4	1	1
Babesiosis (B. microti)	1	0	0
Malaria (P. Falciparum)	0	0	0
Suspected TRALI	4	3	3
Circulatory Overload	7	15	8
Non Specific/Other	211	233	195
Totals	1,653	1,641	1,488

* Please see the summary section for details of the Acute/Delayed Hemolytic Reactions

TABLE VII A
DONOR REACTIONS REPORTED BY BLOOD CENTERS and A PLASMAPHERESIS CENTER

Reaction Types:	2012		2013		2014	
	#	%	#	%	#	%
Slight or Mild	2,775	0.9	4,172	1.5	3,551	1.4
Moderate	526	0.2	379	0.1	319	0.1
Severe	73	0.02	59	0.02	80	0.03
Total	3,374	1.1	4,610	1.7	3,950	1.5

TABLE VIII
BREAKDOWN of WB and RBC TRANSFUSIONS BY SITE

Number of Units Transfused	2012		2013		2014	
	Whole Blood	Red Cells	Whole Blood	Red Cells	Whole Blood	Red Cells
Hospitals	483	315,459	278	304,616	213	291,082
Out of Hospitals		8,224		7,999		8,291
Total Transfusions:		324,166		312,893		299,586

TABLE IX
UNITS of WB, RBC and OTHER BLOOD COMPONENTS TRANSFUSED IN NEW JERSEY
HOSPITALS AND OUT OF HOSPITAL TRANSFUSION FACILITIES

	2012		2013		2014	
	Transfused	Outdated	Transfused	Outdated	Transfused	Outdated
Whole Blood	483	+	278	+	213	+
* Packed Red Blood Cells	323,683	+	312,615	+	299,373	+
Washed Red Blood Cells	1,030	0.4%	566	0.9%	558	2.0%
Frozen Red Blood Cells	49	17.7%	80	2.5%	60	7.7%
RBCs Leukocytes Reduced	290,677	0.8%	292,400	0.8%	299,013	1.0%
<u>Sub Total</u>	324,166		312,893		299,586	
Fresh Frozen Plasma	87,390	2.8%	84,347	2.6%	77,020	3.0%
Plasma Frozen w/in 24 hours of Collection	2,839	6.7%	1,853	5.1%	1,966	2.6%
Platelet Concentrates	646	56.8%	356	58.9%	334	57.5%
Single Donor Platelets	45,518	6.6%	50,535	6.1%	51,072	9.3%
Cryoprecipitate	13,932	6.7%	16,128	4.3%	14,199	6.8%
Leukocytes	26	0%	11	0%	3	0%
Cryo-Poor Plasma	352	0%	0	0%	0	0%
Pre-pooled Cryoprecipitate	1,099	7.7%	1,112	9.4%	1,061	1.9%
Jumbo FFP	Not Reported		Not Reported		Not Reported	
<u>Sub Total</u>	151,802		154,342		145,655	
<u>Grand Totals</u>	475,968		467,235		445,241	
* The figure for Packed Red Blood Cells includes RBCs transfused as washed, frozen, and/or RBCs Leukocytes Reduced.						
Crossmatch/Transfusion						
Ratio	1.5		1.5		1.6	

+ Data Not Available

TABLE X

2014 HOSPITAL AND OUT OF HOSPITAL USE CATEGORIZED BY DONOR TYPE

County	Whole Blood (0.07% of Total Transfusions)					Red Blood Cells (99.93% of Total Transfusions)					County Sub Total	
	Allogeneic	%	Autologous	%	Directed	%	Allogeneic	%	Autologous	%	Directed	%
Atlantic & Cape May	0	0.0%	43	20.2%	0	0.0%	12,836	4.3%	0	0.0%	3	0.6%
Bergen	0	0.0%	0	0.0%	0	0.0%	35,019	11.7%	79	31.3%	281	54.7%
Burlington	0	0.0%	0	0.0%	0	0.0%	10,047	3.4%	0	0.0%	0	0.0%
Camden	0	0.0%	6	2.8%	0	0.0%	22,415	7.5%	0	0.0%	50	9.7%
Cumberland	0	0.0%	0	0.0%	0	0.0%	4,898	1.6%	0	0.0%	0	0.0%
Essex	0	0.0%	12	5.6%	0	0.0%	43,190	14.5%	8	3.2%	44	8.6%
Gloucester	0	0.0%	2	0.9%	0	0.0%	6,857	2.3%	0	0.0%	1	0.2%
Hudson	0	0.0%	0	0.0%	0	0.0%	14,155	4.7%	7	2.8%	0	0.0%
Hunterdon & Somerset	0	0.0%	0	0.0%	0	0.0%	6,262	2.1%	17	6.7%	2	0.4%
Mercer	0	0.0%	10	4.7%	0	0.0%	11,158	3.7%	4	1.6%	0	0.0%
Middlesex	0	0.0%	94	44.1%	0	0.0%	36,171	12.1%	43	17.1%	67	13.0%
Monmouth	0	0.0%	0	0.0%	0	0.0%	19,692	6.6%	20	7.9%	42	8.2%
Morris	0	0.0%	7	3.3%	0	0.0%	22,096	7.4%	0	0.0%	0	0.0%
Ocean	0	0.0%	33	15.5%	0	0.0%	18,380	6.2%	31	12.3%	0	0.0%
Passaic	0	0.0%	0	0.0%	0	0.0%	12,929	4.3%	2	0.8%	21	4.1%
Salem	0	0.0%	4	1.9%	0	0.0%	1,783	0.6%	5	2.0%	0	0.0%
Sussex	0	0.0%	0	0.0%	0	0.0%	2,541	0.9%	0	0.0%	0	0.0%
Union	0	0.0%	2	0.9%	0	0.0%	15,260	5.1%	35	13.9%	3	0.6%
Warren	0	0.0%	0	0.0%	0	0.0%	2,918	1.0%	1	0.4%	0	0.0%
Totals	0	0.0%	213	100%	0	0.0%	298,607	99.7%	252	0.1%	514	0.2%
% of Total Transfusions	0.0%		0.07%		0.0%		99.7%		0.08%		0.15%	100%

TABLE XI
DISTRIBUTION OF BLOOD TO TRANSFUSION SERVICES BY COUNTY (as reported by the hospitals)

County	Incoming Supply	Hospital Donors	%	American Red Cross Penn-Jersey Region	%	New Jersey Blood Services /NYBC	%	Community Blood Centers	%	Available Supply
Atlantic & Cape May										
2012	16,640	0	0%	+	+	+	+	0	0%	16,458
2013	15,131	0	0%	9,979	66%	5,152	34%	0	0%	14,586
2014	13,425	0	0%	5,251	39%	8,174	61%	0	0%	13,438
Bergen										
2012	37,656	1,812	5%	+	+	+	+	29,095	77%	37,562
2013	35,820	1,946	5%	3,684	10%	2,744	8%	27,446	77%	35,699
2014	35,844	695	2%	3,234	9%	3,023	8%	28,892	81%	35,817
Burlington										
2012	10,860	0	0%	+	+	+	+	338	3%	10,831
2013	10,564	0	0%	10,208	97%	0	0%	356	3%	10,423
2014	10,522	0	0%	10,233	97%	0	0%	289	3%	10,220
Camden										
2012	24,538	0	0%	+	+	+	+	861	4%	24,492
2013	25,746	0	0%	24,909	97%	0	0%	837	3%	25,724
2014	23,113	0	0%	22,319	97%	0	0%	794	3%	23,194
Cumberland										
2012	5,788	0	0%	+	+	+	+	573	10%	5,757
2013	5,570	0	0%	4,291	77%	1,205	22%	74	1%	5,547
2014	4,916	0	0%	4,767	97%	0	0%	149	3%	4,926

+ Please see the 2012 Statistical Summary of Blood Use in New Jersey for the aggregated numbers for American Red Cross (ARC) Penn-Jersey Region and New Jersey Blood Services (NYBC).

TABLE XI (Continued)
DISTRIBUTION OF BLOOD TO TRANSFUSION SERVICES BY COUNTY (as reported by the hospitals)

County	Incoming Supply	Hospital Donors	%	American Red Cross Penn-Jersey Region	%	New Jersey Blood Services /NYBC	%	Community Blood Centers	%	Available Supply
Essex										
2012	46,945	14	0%	+	+	+	+	6,880	15%	42,767
2013	44,438	31	0%	29,921	67%	4,883	11%	9,603	22%	44,627
2014	43,817	30	0%	30,165	69%	4,967	11%	8,655	20%	43,893
Gloucester										
2012	7,620	0	0%	+	+	+	+	2	0%	7,628
2013	7,163	0	0%	7,163	100%	0	0%	0	0%	7,123
2014	7,041	0	0%	7,041	100%	0	0%	0	0%	7,000
Hudson										
2012	14,559	0	0%	+	+	+	+	12,185	84%	14,348
2013	15,021	0	0%	3,048	20%	1	0%	11,972	80%	14,756
2014	14,795	0	0%	2,497	17%	32	0%	12,266	83%	14,319
Hunterdon & Somerset										
2012	7,089	4,822	68%	+	+	+	+	1,671	24%	7,109
2013	6,505	4,357	67%	10	0%	525	8%	1,613	25%	6,486
2014	6,338	4,140	65%	2	0%	522	8%	1,674	27%	6,360
Mercer										
2012	12,313	0	0%	+	+	+	+	6,443	52%	12,309
2013	13,210	0	0%	6,292	48%	0	0%	6,918	52%	13,079
2014	11,939	0	0%	6,046	51%	221	2%	5,672	47%	11,790

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TABLE XI (Continued)
DISTRIBUTION OF BLOOD TO TRANSFUSION SERVICES BY COUNTY (as reported by the hospitals)

County	Incoming Supply	Hospital Donors	%	American Red Cross Penn-Jersey Region	%	New Jersey Blood Services /NYBC	%	Community Blood Centers	%	Available Supply
Middlesex										
2012	39,065	2,204	5%	+	+	+	+	27,572	71%	39,095
2013	37,335	1,593	4%	5,533	15%	3,883	10%	26,326	71%	37,358
2014	36,976	1,786	5%	1,780	5%	7,813	21%	25,597	69%	37,332
Monmouth										
2012	23,394	0	0%	+	+	+	+	20,027	86%	22,938
2013	22,390	0	0%	3,452	15%	9	0%	18,929	85%	21,981
2014	20,177	0	0%	3,745	19%	2	0%	16,430	81%	20,031
Morris										
2012	23,849	3,273	14%	+	+	+	+	13,954	58%	23,640
2013	23,250	3,183	14%	6,693	29%	0	0%	13,374	57%	23,234
2014	23,130	3,212	14%	4,568	20%	45	0%	15,305	66%	22,664
Ocean										
2012	19,106	0	0%	+	+	+	+	6,318	33%	19,065
2013	18,808	0	0%	12,492	66%	0	0%	6,316	34%	18,699
2014	18,672	0	0%	12,159	65%	0	0%	6,513	35%	18,611
Passaic										
2012	15,569	1,175	8%	+	+	+	+	14,394	92%	15,574
2013	14,152	641	5%	0	0%	0	0%	13,511	95%	14,058
2014	13,129	0	0%	0	0%	64	0%	13,065	100%	13,116

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TABLE XI (Continued)
DISTRIBUTION OF BLOOD TO TRANSFUSION SERVICES BY COUNTY (as reported by the hospitals)

County	Incoming Supply	Hospital Donors	%	American Red Cross Penn-Jersey Region	%	New Jersey Blood Services /NYBC	%	Community Blood Centers	%	Available Supply
Salem										
2012	2,016	0	0%	+	+	+	+	119	6%	1,927
2013	2,146	0	0%	1,885	88%	233	11%	28	1%	1,957
2014	2,094	0	0%	2,086	100%	0	0%	8	0%	1,963
Sussex										
2012	2,507	0	0%	+	+	+	+	2,105	84%	2,392
2013	2,479	0	0%	157	6%	0	0%	2,322	94%	2,351
2014	2,568	0	0%	22	1%	0	0%	2,546	99%	2,558
Union										
2012	17,377	1,293	8%	+	+	+	+	16,040	92%	17,300
2013	16,216	1,396	9%	0	0%	11	0%	14,809	91%	16,170
2014	15,602	1,160	7%	0	0%	16	0%	14,426	93%	15,554
Warren										
2012	3,943	0	0%	+	+	+	+	3,936	100%	3,658
2013	3,295	0	0%	0	0%	0	0%	3,295	100%	2,972
2014	3,394	0	0%	0	0%	0	0%	3,394	100%	2,929
GRAND TOTAL:										
2012	330,834	14,593	4%	+	+	+	+	162,513	49%	324,850
2013	319,239	13,147	4%	129,717	41%	18,646	6%	157,729	49%	316,830
2014	307,492	11,023	3%	115,915	38%	24,879	8%	155,675	51%	305,715

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